

- F. Section 312(p)(8)(A) makes it “unlawful for any person to violate a provision of the Vessel General Permit.” 33 U.S.C. § 1322(p)(8)(A)(i).
- G. Section 2.2.26 of the VGP requires owners or operators of vessels with EGCS that result in washwater discharges to meet certain numeric effluent limits. The VGP states that the limits are consistent with International Maritime Organization (“IMO”) washwater guidelines for EGCS, with the exception of pH. The IMO washwater guidelines establish a pH limitation of no less than 6.5 (not 6.0 as required in the 2013 VGP), but allow for meeting this pH limitation four meters from the discharge point as demonstrated during commissioning of the EGCS unit after installation.
- H. Section 2.2.26.1 of the VGP states, “The discharge of washwater from the exhaust gas scrubber treatment system must have a pH of no less than 6.0 measured at the ship’s overboard discharge, with the exception that during maneuvering and transit, the maximum difference between inlet and outlet of 2.0 pH units is allowed. The difference is to be measured at the ship’s inlet and overboard discharge.”
- I. Section 2.2.26.2.1 of the VGP establishes monitoring requirements to continuously record pH.
- J. Section 309(a) of the CWA, 33 U.S.C. § 1319(a), provides that, whenever EPA finds that any person is in violation of any condition or limitation which implements, *inter alia*, Sections 301, 312, and 402 of the CWA, 33 U.S.C. §§ 1311, 1322, and 1342, EPA may issue an order requiring such person to comply with such condition or limitation, and shall specify a time for compliance that the EPA determines to be reasonable.
- K. Carnival Corporation (“Carnival”) is a corporation headquartered in Miami, Florida, and is a “person” within the meaning of Section 502(5) of the CWA, 33 U.S.C. § 1362(5).
- L. During the 2019 and 2020 sailing seasons, Carnival and its subsidiaries will own or operate cruise ships in waters of the United States near the State of Alaska (Alaska waters) with one or more EGCSs. The cruise ships for 2019 are: *Carnival Legend, Queen Elizabeth, Coral Princess, Golden Princess, Grand Princess, Island Princess, Royal Princess, Ruby Princess, Star Princess, Sun Princess, Amsterdam, Eurodam, Maasdam, Nieuw Amsterdam, Noordam, Oosterdam, Volendam, Westerdam, and Seabourn Sojourn*. The cruise ships for 2020 are: *Carnival Miracle, Carnival Spirit, Queen Elizabeth, Coral Princess, Emerald Princess, Golden Princess, Grand Princess, Pacific Princess, Royal Princess, Ruby Princess, Star Princess, Sun Princess, Eurodam, Koningsdam, Maasdam, Noordam, Oosterdam, Volendam, Westerdam, and Seabourn Sojourn*. These ships, collectively, are the “Covered Cruise Ships”. The list of Covered Cruise Ships for subsequent years will be provided 60 days in advance of those sailing seasons.
- M. The Covered Cruise Ships are “point sources” as defined in Section 501(14) of the CWA, 33 U.S.C. § 1362(14). They are also each greater than 79 feet in length and subject to the VGP.
- N. Each of the Covered Cruise Ships, with the exception of the *Carnival Spirit*, which is not scheduled to operate in Alaska until 2020, is covered under a current Notices of Intent (“NOI”).
- O. In 2013, in accordance with MARPOL Annex VI’s fuel sulfur requirements for the North American Emission Control Area (“ECA”), Carnival decided to conduct a trial program, which EPA and the

U.S. Coast Guard (“USCG”) supported, including the development of EGCS technology as a method for complying with the fuel sulfur limits.

- P. Beginning in 2014 and continuing through 2017, Carnival installed EGCSs on the 32 cruise ships covered under the trial program described above, and on 33 additional cruise ships from five cruise brands, all using the Ecospray Technologies system, at a cost of approximately \$500 million. These EGCS have demonstrated the ability to meet or exceed the discharge requirements of the VGP for all parameters, with occasional exceptions related to pH. As the EGCSs began operating in the marine environment, Carnival discovered technical issues resulting in occasional periodic exceedances of the pH limits in the VGP.
- Q. During 2016, all but one of the Covered Cruise Ships had discharges to Alaskan waters from the EGCS that did not meet the VGP’s pH limit of 6.0, ranging from five exceedance events to 434 exceedance events, demonstrated through continuous monitoring data collected every three minutes. The vast majority of the exceedances appeared to be less than 0.5 below the pH limit, or within 0.51 and 2 below the pH limit. These exceedances violated Sections 301 and 402 of the CWA, 33 U.S.C. §§ 1311 and 1342, by failing to comply with Section 2.2.26 of the VGP.
- R. Carnival promptly informed EPA in October 2015 of its concern regarding these occasional exceedances and began, and continues, to take actions to evaluate how to address them.
- S. In addition, in an effort to obtain consistent pH readings of 6.0 or above, Carnival represents that it made additional improvements to the EGCSs, as well as adjustments to ship operations, beginning in 2016 and continuing through the present. These adjustments include: (a) using premium lower sulfur (2.0%) fuel in Alaskan waters that is lower than allowed (3.5%) when using an EGCS, obtained through fuel contracts at key fuel bunkering ports; (b) making refinements to system automation software and to EGCS and engine operating practices; (c) retrofitting de-gassing units on each system to avoid pH impact from entrained exhaust gases; (d) conducting operational trials of new system buffering water mixer designs and chemical dosing; and (e) fitting most ships operating in U.S. waters with additional buffering seawater capacity, including larger pump motors, drives, and piping, to increase volumes by 30-50% per ship, and represents that this cost an additional \$6,200,000. These improvements are continually being made.
- T. Despite Carnival’s attention to these issues with the EGCSs, during the 2016-2018 sailing seasons, Carnival realized that there were still occasions during which the pH readings showed discharges below the pH limit. The pH is measured on all ships on a continuous basis with samples taken every three minutes, seven days a week, 24 hours a day. This occurs even when the ships’ engines and EGCSs are not operating and there is no overboard discharge. Samples are also taken and recorded during calibration checks of the equipment. At those times, the analytical result reflects the pH of the calibration solution and not the overboard discharge.
- U. To address these pH challenges, Carnival began discussions with EPA to develop compliance measures to demonstrate whether the 6.0 pH limit in the VGP is technologically and economically achievable and implement actions to achieve compliance with the VGP’s pH limit. Carnival also agreed to conduct a sampling protocol to record the pH of ambient waters throughout Southeastern Alaska from the Covered Cruise Ships, and to measure pH of discharges from the EGCSs in ports to verify the distance required to revert to ambient water pH levels. These compliance measures were set forth in the August 2017 Administrative Order on Consent (“2017 AOC”) (EPA Docket No.: CWA-HQ-2017-0001), which is attached for reference as Attachment 1. Carnival has complied with

the terms of the 2017 AOC.

- V. The data gathered under the 2017 AOC was intended to help inform EPA while it was considering new pH standards for the 2018 VGP, which was scheduled to go into effect in December 2018. However, development of the 2018 VGP was abandoned as a result of the enactment of VIDA. Since new standards under VIDA are unlikely to be implemented until December 2022, at the earliest, this new Administrative Order on Consent ("2019 AOC") is necessary as Carnival continues to address certain pH challenges.

II. JURISDICTION

- A. Pursuant to Section 309(a) of the Act, EPA has worked with Carnival to develop, and hereby issue, this 2019 AOC to evaluate the compliance capabilities of the EGCSs, alternatives to achieve compliance and a timetable to do so. By its signature on this 2019 AOC, Carnival hereby agrees and consents to the Order.
- B. The authority to issue this 2019 AOC has been delegated from the Administrator of EPA through the Assistant Administrator for Enforcement and Compliance Assurance and the Director of the Office of Civil Enforcement to the Director of the Water Enforcement Division.
- C. Any change in the legal status of Carnival, and/or Carnival's ownership of the Covered Cruise Ships, including, but not limited to any transfer of assets of real or personal property, shall not alter Carnival's responsibilities under this 2019 AOC.

III. APPLICABILITY

- A. Carnival shall implement this 2019 AOC for each Covered Cruise Ships when the ships are in Alaskan state waters and within three nautical miles of the Alaskan coastline.

IV. ALASKA CRUISE SHIP SAILING SEASONS BEGINNING IN 2019

A. Interim Effluent Limits

1. Until national performance standards for EGCS washwater discharges are developed pursuant to CWA 312(p)(5), 33 U.S.C. § 1322(p)(5), and are final, effective, and enforceable, Carnival shall comply with the following interim effluent limit: For each Covered Cruise Ship, to the extent possible, Carnival shall comply with the EGCS discharge requirements for pH in the 2013 VGP. In any event, the pH of the EGCS effluent shall not fall below 5.7 pH at the end of the pipe, except that for 10% of the time during each calendar day, the pH may be as low as 5.5 pH.

B. Compliance Requirements

1. No later than January 30 of each year, beginning in 2020, Carnival shall submit a report to EPA, for each Covered Cruise Ship, to include a statement as to whether Carnival will be able to comply with the following EGCS discharge requirements for pH during the upcoming sailing season:

- a. The 2013 VGP; or
 - b. The interim effluent limits established in IV.A.1 of the 2019 AOC.
2. Carnival shall monitor pH and flow continuously consistent with Sections IV.A-C of the 2017 AOC and, within 60 days of a request from EPA, Carnival shall submit the monitoring data consistent with the format specified in Section IV.G of the 2017 AOC.

C. Annual Reporting

1. Report Evaluating Alternatives:
- a. In 2019 and 2020, no later than August 15 of each year, Carnival shall prepare and submit to EPA an updated and expanded version of the alternatives report previously submitted in accordance with Section IV.I. of the 2017 AOC. This new version of the report shall include:
 - i. Updated technical feasibility and cost estimates for deployment of the alternatives described in Section IV.I.1 of the 2017 AOC; and
 - ii. For any new or emerging alternative identified by EPA or Carnival, a description of the alternative, the technical feasibility, and a cost estimate.
 - 2. No later than October 31, 2019, Carnival shall provide a characterization of voyages of the Covered Cruise Ships that operated in Alaska during the 2019 sailing season (through September 30). This report shall include:
 - a. Characterization of each vessel's Alaska cruise itinerary, voyage duration, and amount of time spent in: (1) U.S. VGP waters in Alaska, (2) Alaskan ECA waters outside the VGP, (3) U.S. VGP waters outside Alaska, (4) in U.S. ports in Alaska, and (5) U.S. ports outside Alaska, (6) in any area within U.S. waters identified in Appendix G of the 2013 VGP and not otherwise included in item (4).
 - b. Characterization of time during the voyage where engines were powered by (1) low sulfur fuel oil or (2) high sulfur fuel oil combined with EGCSs and an explanation of the decision-making criteria for selection of the fuel source used, including how the different locations identified in IV.C.2.a of the 2019 AOC are considered in this process.
3. Review of Reports on Environmental Impacts:
- a. No later than August 31, 2021, Carnival shall submit an updated version of the research review submitted in compliance with Section IV.J. of the 2017 AOC.

4. pH and Flow Monitoring Data Summaries:

- a. In 2019 and 2020, no later than October 31 of each year, Carnival shall provide a report of EGCS discharges for the vessels that operated in Alaska during that year's sailing season (through September 30) with the following information:
 - i. A summary of EGCS discharges for each vessel when operating in Alaskan waters in a manner that compares pH effluent data with the range of effluent limitations identified in IV.B.1 of the 2019 AOC.
 - ii. A summary of Carnival's conclusions regarding the factors that result in exceedance of pH effluent limitations and Carnival's recommendations on how any of these factors might be addressed in the future.
 - iii. For each vessel, a comparison summary of the buffer water and seawater supply flow rates when (1) transiting in Alaskan waters, (2) when transiting or maneuvering in U.S. ports, harbors, and estuaries, and (3) when docked in U.S waters.

D. Operational Challenges Report

1. No later than October 31 of each year, beginning in 2019, provide a summary of challenges encountered with the use of EGCS equipment and associated procedures during that year's sailing season on any vessel operating in Alaska. Identify actions taken or planned to address these challenges. Exclude any challenges reported pursuant to IV.C.4.a.ii of the 2019 AOC.

V. REPORTS AND SUBMISSIONS

- A. All reports, notifications, documentation, and submittals required by this 2019 AOC shall be signed by a duly authorized corporate official of Carnival and shall include the following statement:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on any information I have and on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

- B. All reports, notifications, documentation, and submittals required by this 2019 AOC shall be submitted electronically to the following recipients:

Dane Wilson
Attorney-Advisor
U.S. EPA
Water Enforcement Division

Office of Enforcement and Compliance Assurance
Wilson.dane@epa.gov

Jack Faulk
Vessels Team
U.S. EPA
Office of Water
Water Permits Division
Faulk.Jack@epa.gov

Amber LeBlanc
Administrative Operations Manager
Alaska Department of Environmental Conservation
Division of Water
Amber.LebLANC@Alaska.gov

- C. EPA may, at any time, change the people identified to receive information pursuant to this 2019 AOC and the email addresses or other format to provide such information, by providing written notice to Carnival pursuant to this section.
- D. All notices, comments, and other information provided to Carnival shall be submitted electronically to the following recipients:

Michael Kaczmarek
Carnival Corporation
MKaczmarek@carnival.com

Jeanne M. Grasso, Esq.
Blank Rome LLP
grasso@blankrome.com

Arnaldo Perez, Esq.
General Counsel
Carnival Corporation
APerez@carnival.com

VI. ADMISSIONS AND WAIVERS

- A. For purposes of an action by EPA to enforce this 2019 AOC, Carnival:
1. Admits the jurisdictional allegations of this 2019 AOC;
 2. Neither admits nor denies specific factual allegations contained in this 2019 AOC;
 3. Consents to all conditions specified in this 2019 AOC;
 4. Waives any right to contest the allegations set forth in this 2019 AOC;

5. Waives any claims for relief and otherwise available rights or remedies to judicial or administrative review which Carnival may have with respect to any issue of fact or law set forth in this 2019 AOC, including, but not limited to, any right of judicial review of the 2019 AOC under the Administrative Procedure Act, 5 U.S.C. § 701-706; and
6. Waives the right to appeal this 2019 AOC.

VII. RESERVATION OF RIGHTS

- A. This 2019 AOC is not a permit or modification of any existing permit issued pursuant to any federal, state, or local laws or regulations, and shall in no way relieve or affect Carnival's obligations under any applicable federal, state, or local laws, regulations or permits.
- B. This 2019 AOC shall apply to and be binding on Carnival, and its officers, directors, employees, agents, successors and assigns. Action or inaction of any persons, firms, contractors, employees, agents or corporations acting under, through, or for Carnival shall not excuse any failure of Carnival to fully perform its obligations under this 2019 AOC. Changes in ownership, real property interest, or transfer of personal assets shall not alter Carnival's obligations under this 2019 AOC.

VIII. ATTORNEY FEES AND COSTS

- A. Unless otherwise specified, each party shall bear its own attorney fees and costs.

IX. EFFECTIVE DATE AND TERMINATION

- A. The Effective Date of this 2019 AOC is the date on which an executed copy is received by Carnival's counsel.
- B. If EPA determines, after review of the reports and information provided, that all requirements of this 2019 AOC have been satisfied, EPA will provide notice to Carnival that the 2019 AOC shall be deemed terminated. If EPA determines that any provision of this 2019 AOC has not been satisfied, EPA will notify Carnival, provide a list of the deficiencies, and may require Carnival to correct such deficiencies. If so required, Carnival shall correct such deficiencies and shall submit documentation to demonstrate compliance in accordance with the EPA notice within 30 days of receipt of such notice.

X. GENERAL PROVISIONS

- A. This 2019 AOC does not constitute a waiver or a modification of the terms and conditions of the VGP, which remains in full force and effect until the U.S. Coast Guard promulgates regulations that are final, effective, and enforceable for implementation, compliance, and enforcement of new EPA standards of performance for marine pollution control devices for each type of discharge incidental to the normal operations of a vessel, 33 U.S.C. § 1322(p)(3).
- B. Failure to comply with the requirements herein shall constitute a violation of this 2019 AOC and the CWA, and may subject Carnival to penalties as provided in Section 309(d) of the CWA, 33 U.S.C § 1319(d).

- C. This 2019 AOC shall not relieve Carnival of its obligation to comply with all applicable provisions of federal, state, or local law, nor shall it be construed to be a ruling on, or determination of, any issue related to any other federal, state, or local permit. Compliance with this 2019 AOC shall not be a defense to any actions subsequently commenced pursuant to federal laws and regulations administered by the EPA.
- D. Nothing in this 2019 AOC shall be construed as prohibition, altering, or in any way limiting the ability of the United States to seek any other remedies or sanctions available by virtue of Carnival's violation of this 2019 AOC or of the statutes and regulations upon which this 2019 AOC is based, or for Carnival's violation of any other federal or state statute, regulation, or permit.
- E. Nothing in this 2019 AOC is intended to nor shall be construed to operate in any way to resolve any criminal liability of Carnival, or other liability resulting from violations that were not alleged in this 2019 AOC. The United States does not waive any right to bring an enforcement action against Carnival for violation of any federal or state statute, regulation, or permit, to initiate an action for imminent and substantial endangerment, or to pursue criminal enforcement.

XI. SIGNATURES

- A. The undersigned representative of Carnival certifies that he or she is authorized to enter into the terms and conditions of this 2019 AOC and to bind Carnival to this document.
- B. The above provisions are STIPULATED AND AGREED upon by Carnival and EPA.

For Carnival Corporation:

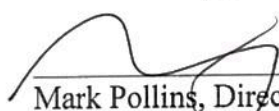
Dated: 5/7/2019



Arnaldo Perez
General Counsel
Carnival Corporation
aperez@carnival.com

For Complainant, the U.S. Environmental Protection Agency, Office of Enforcement and Compliance Assurance:

Dated: 5/7/19

A handwritten signature in black ink, appearing to read 'Mark Pollins', is written over a horizontal line.

Mark Pollins, Director
Water Enforcement Division
Office of Enforcement and Compliance Assurance
Pollins.mark@epa.gov